APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,098	07/22/2003	Hiroki Akano	FUJA 20.519 (100794-00459	8771

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EXAMINER
BANTA, TRAVIS R

ART UNIT	PAPER NUMBER
3714	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

	Application No.	Applicant(s)
Office Action Summary	10/625,098	AKANO, HIROKI
	Examiner	Art Unit	
	Travis R. Banta	3714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>06 September 2006</u>..

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,10-13 and 35-42* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4, 10-13, and 35-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

The amendment submitted 9/06/2006 has been received and is acknowledged.

The Applicant has amended claims 1, 10,11,12, and 13. Claims 5-9 and 14-34 have

been canceled. The amendment has cited "geographical feature information". This

term is not defined in the specification. The Examiner used Figures 32, 33, and 44 to

interpret "geographical feature information" as terrain sample data which could be

displayed by a virtual map. Figures 32 and 33 show a topographical style map but also

use the term "terrain sample data". Geographic feature information is interpreted to be

terrain sample data and is therefore not new matter. Claims 1-4, 10-13, and 35-42 are

pending. The previous rejections of claims 1,10,11,12 and 13 under 35 U.S.C. 112 are

withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 10-13, and 35-42 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Cubic Defense Applications MILES 2000 (each of the websites
below has been assigned a number in which they appear in this action, from 1 to 26.
The included art is numbered to correspond easily in the lower left hand corner. The
following website is 1.)

(http://www.cubic.com/cda1/Prod_&_Serv/Cmbt_Trng_Sys/Grnd_Cmbt_Trng/MILES_2
000/index.html)

in view of Campagnuolo (US 5,474,452).

Regarding claim 1, Cubic Defense Applications teaches a laser transmitting

receiving system providing training solders with target practice. MILES 2000 teaches a

laser transmitter and receiver. The MILES 2000 system is monitored by a computer

disclosed at (2) http://www.cubic.com/cda1/pdf/MAARs%20Manual%20compiled.pdf

under Chapter 2 – System requirements, to contain memory to store geographical

features information for an After Action Review. This geographical information is

disclosed to be at least containing information about wooded or open geography

((3)http://www.cubic.com/cda1/Prod_&_Serv/Cmbt_Trng_Sys/Grnd_Cmbt_Trng/Compo

nents/Instru_equip2.html). The system also uses GPS to track individual units and their

orientation on the combat field. Maps which are a virtual representation of geographical

information system are shown on computer screens in the Combat Training Center

Instrumentation System, Rangeless Training System and the Combat Training Center

After Action Review (see (4)

http://www.cubic.com/cda1/Prod_&_Serv/Cmbt_Trng_Sys/Grnd_Cmbt_Trng/MILES_20

00/Components_AARS/After_Action_Rev.html). The Rangeless Traning System map

shows specific dots of what can be assumed to be the location of a soldier or other

combat unit. Information provided by the lasers relays information to the Combat

Traning Center Instrumentation System to indicate a "kill" or other player event. The

position of the "killed" player is relayed to the Instrumentation System. Real time

tracking shows the killed player's position.

Cubic Defense Applications fails to specifically disclose a modulator for

modulating a laser signal in the MILES 2000 system. In the same MILES 2000 system,

Campagnuolo (US 5,474,452) teaches the lasers are encoded with information unique

to each player and shot. It is inherent that a laser specially encoded with unique

information as taught by Campagnuolo '452 would be modulated to install that

information into the laser. The unique information encoded in the lasers is disclosed to

contain information about the type of ammunition and firearm a transmitted laser

originated from. Cubic Defense Applications teaches that each event (such as a shot, a

kill, or a communications kill) is recorded by the transmitter and time tagged (see (5)

http://www.cubic.com/cda1/Prod_&_Serv/Cmbt_Trng_Sys/Grnd_Cmbt_Trng/MILES_20

00/Components_AARS/Indvdl_Weapon_Sys.html). Cubic Defense Applications also

teaches the addition of GPS technology allows MILES 2000 to take position and

location information for use in the After Action Reviews (see (6)

http://www.cubic.com/cda1/Prod_&_Serv/Cmbt_Trng_Sys/Grnd_Cmbt_Trng/MILES_20

00/index.html). Detectors including judgment units are provided to extract information

from a laser shot and estimate the amount a shot effect using the extracted information

from the laser shot (see Campagnuolo column 1 lines 35-51). One of ordinary skill in

the art would recognize that the unique laser system of the MILES 2000 system in

combination with the GPS improvement implemented is capable of transmitting the

position and location of each laser shot as it is already calculated by the system for the

After Action Review. One of ordinary skill in the art would be motivated to encode the

laser with position and time information of the shot so a soldier or squad would know

which direction fire was coming from when hit so the squad or others could either take

cover or mount a defense to simulate more realistic battlefield conditions. It would

therefore be obvious to one of ordinary skill in the art to combine position and time

information in the encoded laser information with the pre-existing MILES 2000 system to

increase realism in the game.

Regarding claim 2, Cubic Defense Applications MILES 2000 teaches transmitting

a modulated laser signal in response to a signal from the trigger of a weapon. This is

shown in a picture on (7)

http://www.cubic.com/cda1/Prod_&_Serv/Cmbt_Trng_Sys/Grnd_Cmbt_Trng/MILES_20

00/Components_AARS/Indvdl_Weapon_Sys.html. The solder is firing his weapon by

actuating the trigger with his finger as is well known in the art of shooting.

Regarding claim 3, Cubic Defense Applications MILES 2000 fails to disclose

encoding a laser signal with shooter position information. However, one of ordinary skill

in the art recognizes that since the system calculates the position of each shot, it would

be advantageous to render the calculation unnecessary by encoding each shot with the

position information in addition to the information already encoded. It would therefore

be obvious to one of ordinary skill in the art at the time of the invention to include

position information in the output from a shooter of a MILES 2000 rifle.

Regarding claim 4, Cubic Defense Applications MILES 2000 discloses tracking

the soldier in real time. Thus, it continuously updates the position information of each

solder and corresponds to the most recent position information (see (8)

http://www.cubic.com/cda1/Prod_&_Serv/Cmbt_Trng_Sys/Grnd_Cmbt_Trng/index.html)

Regarding claim 10, Cubic Defense Applications MILES 2000 teaches a

computer with sufficient memory to store geographical features information (see (9)

http://www.cubic.com/cda1/pdf/MAARs%20Manual%20compiled.pdf chapter 2, system

requirements). MILES 2000 also contains a judgment unit for judging a shot effect

using time and position information (see (10)

http://www.cubic.com/cda1/Prod_&_Serv/Cmbt_Trng_Sys/Grnd_Cmbt_Trng/MILES_20

00/index.html). The geographical features information is "recorded" (see website

immediately above paragraph 2 line 2) as it pertains to each individual supplied with

GPS technology in the MILES 2000 system. This information is shown on a map in the

After Action Reviews. Cubic Defense Applications MILES 2000 fails to disclose that

time and position information is extracted from a received laser signal. In the same

MILES 2000 system Campagnuolo (US 5,474,452) teaches the lasers are encoded with

information unique to each player and shot (see column 1 lines 35-51). One of ordinary

skill in the art would recognize that since the time and position data is incorporated into

the system already, it would be advantageous to eliminate superfluous elements and

modulate coded time and position information already available into each laser shot. It

would therefore be obvious to one of ordinary skill in the art at the time the invention

was made to encode lasers with time and position information to be extracted from the

received laser signal.

Regarding claim 11, Cubic Defense Applications MILES 2000 teaches a

computer with sufficient memory to store geographical features information (see (11)

http://www.cubic.com/cda1/pdf/MAARs%20Manual%20compiled.pdf chapter 2, system

requirements). MILES 2000 also contains a judgment unit for judging a shot effect

using time and position information (see (12)

http://www.cubic.com/cda1/Prod_&_Serv/Cmbt_Trng_Sys/Grnd_Cmbt_Trng/MILES_20

00/index.html). The judgment unit estimates the effect of a shot in accordance with

information obtained from a received laser signal. Cubic Defense Applications MILES

2000 fails to disclose time difference and position information is extracted from the laser

signal. In the same MILES 2000 system Campagnuolo (US 5,474,452) teaches the

lasers are encoded with information unique to each player and shot (see column 1 lines

35-51). One of ordinary skill in the art would recognize that since the time difference

and position data are incorporated into the system already, it would be advantageous to

eliminate superfluous elements and modulate coded time and position information

already available into each laser shot. It would therefore be obvious to one of ordinary

skill in the art at the time the invention was made to encode lasers with time difference

and position information to be extracted from the received laser signal.

The geographical features information is "recorded" (see website immediately ·

above paragraph 2 line 2) as it pertains to each individual supplied with GPS technology

in the MILES 2000 system. This information is shown on a map in the After Action

Reviews.

Regarding claim 12, Cubic Defense Applications MILES 2000 teaches a

computer with sufficient memory to store geographical features information (see (13)

http://www.cubic.com/cda1/pdf/MAARs%20Manual%20compiled.pdf chapter 2, system

requirements). A munitions type parameter recorder for recording munitions type

parameters (see (14)

http://www.cubic.com/cda1/Prod_&_Serv/Cmbt_Trng_Sys/Grnd_Cmbt_Trng/MILES_20

00/Components_AARS/Indvdl_Weapon_Sys.html). A judgment unit is provided for

judging shot effectiveness and the type of munitions. Munitions information is extracted

from the laser signal to enable the receiver to detect the criticality of the hit. Cubic

Defense Applications MILES 2000 fails to disclose time difference and position

information is extracted from the laser signal. In the same MILES 2000 system

Campagnuolo (US 5,474,452) teaches the lasers are encoded with information unique

to each player and shot (see column 1 lines 35-51). One of ordinary skill in the art

would recognize that since the time difference and position data are incorporated into

the system already, it would be advantageous to eliminate superfluous elements and

modulate coded time and position information already available into each laser shot. It

would therefore be obvious to one of ordinary skill in the art at the time the invention

was made to encode lasers with time difference and position information to be extracted

from the received laser signal.

The geographical features information is "recorded" (see website immediately

above paragraph 2 line 2) as it pertains to each individual supplied with GPS technology

in the MILES 2000 system. This information is shown on a map in the After Action

Reviews.

Regarding claim 13, Cubic Defense Applications MILES 2000 discloses a

controller comprising a computer with sufficient memory to store geographical features

information (see (15)

http://www.cubic.com/cda1/pdf/MAARs%20Manual%20compiled.pdf chapter 2, system

requirements). The computer responds to real time information being processed on the

simulated battlefield. The computer will sense the modulator and hence the soldier's

time and position of each shot from a weapon as well as the geographical feature

information being provided by GPS and the system (wooded or open area etc.).   Cubic

Defense Applications MILES 2000 fails to disclose geographical feature, time and

position information being transmitted to the laser transmitter. In the same MILES 2000

system Campagnuolo (US 5,474,452) teaches the lasers are encoded with information

unique to each player and shot (see column 1 lines 35-51). One of ordinary skill in the

art would recognize that since the geographic, time, and position data are incorporated

into the system already, it would be advantageous to eliminate superfluous elements

and modulate coded time and position information already available into each laser

shot. It would therefore be obvious to one of ordinary skill in the art at the time the

invention was made to encode lasers with geographic, time, and position information to

be transmitted in the laser signal.

Regarding claim 35, Cubic Defense Applications MILES 2000 discloses a laser

transmitting/receiving system for target practice. The laser transmitter is installed on a

shooting apparatus. The apparatus is manually articulated to trigger a signal for the

weapon to transmit a laser signal in a straight line with respect to the axis of the barrel.

The shooting side apparatus also comprises a position finder for generating position

information. This information is tracked and recorded by a computer in real time to

continuously update the information about the position finder (Please see the art cited in

the rejection of claim 1 for evidence). The apparatus is able to shoot a laser encoded

with information. Cubic Defense Applications MILES 2000 fails to disclose all of the

information encoded in the laser shot. Cubic Defense Applications MILES 2000 does

disclose transmitting shot weapon type information and shot munitions type information.

In the same MILES 2000 system Campagnuolo (US 5,474,452) teaches the lasers are

encoded with information unique to each player and shot (see column 1 lines 35-51).

One of ordinary skill in the art would recognize that the unique laser system of the

MILES 2000 system in combination with the GPS improvement implemented is capable

of transmitting the position and location of each laser shot as it is already calculated by

the system for the After Action Review. One of ordinary skill in the art would be

motivated to encode the laser with position and time information of the shot so a soldier

or squad would know which direction fire was coming from when hit so the squad or

others could either take cover or mount a defense to simulate more realistic battlefield

conditions. It would therefore be obvious to one of ordinary skill in the art to combine

position and time information in the encoded laser information with the pre-existing

MILES 2000 system to increase realism in the game.

Regarding claim 36, Cubic Defense Applications MILES 2000 teaches a laser transmitting/receiving system. The system comprises a computer that generates the time information of a shot and marks the corresponding position information. The computer continuously tracks in real time the time information of the shooter monitored by GPS. The transmitter in the system transmits position information of the shooter, and the time information output from the shooter (see art cited as evidence in the rejection of claim 1). In the same MILES 2000 system Campagnuolo (US 5,474,452) teaches the lasers are encoded with information unique to each player and shot (see column 1 lines 35-51). One of ordinary skill in the art would recognize that since the time and position data are incorporated into the system already, it would be advantageous to eliminate superfluous elements and modulate coded time and position information already available into each laser shot. It would therefore be obvious to one of ordinary skill in the art at the time the invention was made to encode lasers with time and position information to be transmitted in the laser signal. The signal is created when a trigger signal is applied by the shooter to the weapon by pulling the trigger.

Regarding claim 37, Cubic Defense Applications MILES 2000 teaches a laser transmitting/receiving system. The laser receiver is put on a target. The receiver will judge the laser signal from the transmitter to determine the effect of the fired laser shot. The target soldier is equipped with GPS to generate position information of the target. A computer tracks the progress/position and shooting in real time of each soldier on the field. Each of various munitions is tracked for effectiveness in the battle and effects of the munitions are recorded in the computer device. Munitions parameters necessary for

the calculations of a hit risk range for each type of munitions are provided in the

computer to obtain an effectiveness of the shot and are measured and judged by the

detectors worn by a target soldiers. This information is encoded in the laser fired by the

shooting side apparatus and received by the target side apparatus. The effects of the

shot are broadcast to the tracking computer. Necessary parameters include various

parameters to ensure the realism of the shot such as caliber and weapon (satisfactory

information to determine range). This information is used to judge the effectiveness of a

shot on the target side (see (16)

http://www.cubic.com/cda1/Prod_&_Serv/Cmbt_Trng_Sys/Grnd_Cmbt_Trng/MILES_20

00/Components_AARS/Indvdl_Weapon_Sys.html.) Effective ranges of damage are

applied to "indirect fire" weapons such as mortars, tanks, chemical, biological, and

nuclear weapons (see (17)

http://www.cubic.com/cda1/Prod_&_Serv/Cmbt_Trng_Sys/Grnd_Cmbt_Trng/MILES_20

00/Components_AARS/Firing_Devices.html). These ranges are determined using a 3D

reference system based on GPS and the topographic map shown on the computer

screen in the Combat Training Center Instrumentation system (see (18)

http://www.cubic.com/cda1/Prod_&_Serv/Cmbt_Trng_Sys/Grnd_Cmbt_Trng/MILES_20

00/Components_AARS/After_Action_Rev.html).

Cubic Defense Applications MILES 2000 fails to disclose calculating velocity of a

shot. Cubic Defense Applications MILES 2000 teaches realism encoded into each laser

signal incorporating the characteristics of an individual caliber and weapon. Military

cartridges, barrels, and firearm are all designed for consistent results. That is to say,

each cartridge, barrel, and firearm are designed to be the same or at least within acceptable ranges of tolerance. Given the information of caliber and weapon and the standardized nature of the weapons system, it is possible to calculate the velocity of each bullet. One of ordinary skill in the art would recognize that the velocity of each bullet is useful in tank, mortar, and artillery gunnery because of the delayed effect of fire due to the unique firing characteristics and distances of each armament. That is to say, a simulated laser artillery shot would hit an area almost instantaneously whereas a realistic artillery shot would take several seconds to hit an area. It would be obvious to one of ordinary skill in the art at the time of the invention to calculate the velocity of each shot to improve the realism of the armaments by ensuring a fired shot struck a position when a real shot would have.

Regarding claim 38, Cubic Defense Applications MILES 2000discloses a laser transmitting and receiving system. A computer tracks each soldier target or shooting side. Real time data is produced to track the time and position of each soldier. These movements are recorded to be reviewed in the After Action Reviews. Cubic Defense Applications MILES 2000 fails to specifically disclose a hit risk range calculated and recorded for each predetermined elapsed time from a shot and judged for effect. Cubic Defense Applications MILES 2000 teaches a hit simulator that is used to simulate indirect fire (a hit risk range). One of ordinary skill in the art would recognize that simulating a hit risk range and judging the effect on each predetermined shot would aid in realism training for fighting units. It would therefore be obvious to one of ordinary skill

in the art to incorporate a hit risk range calculated and recorded for each shot and to judge that shot for effect to simulate indirect fire.

Regarding claim 39, Cubic Defense Applications teaches a laser transmitting/receiving system. A target side soldier is outfitted with detectors incorporating GPS technology (see (19)

http://www.cubic.com/cda1/Prod_&_Serv/Cmbt_Trng_Sys/Grnd_Cmbt_Trng/MILES_20 00/index.html). The transmitter (see (20)

http://www.cubic.com/cda1/Prod_&_Serv/Cmbt_Trng_Sys/Grnd_Cmbt_Trng/MILES_20 00/Components_AARS/Indvdl_Weapon_Sys.html) calculates and records shots and time tags other events. The detector is in communication with a computer which identifies when and where a player is shot using GPS and the time/event logs provided by the transmitter. The system is also capable of showing what type of terrain a soldier is in be it wooded or open etc (see (21)

http://www.cubic.com/cda1/Prod_&_Serv/Cmbt_Trng_Sys/Grnd_Cmbt_Trng/Componen ts/Instru_equip2.html). This is regarded to be a terrain recorder. The terrain is showed on a topographical map which is deemed to be a 3D reference system to show terrain based safe regions. The system calculates and records shot headings and positions from targets and based on the target and the shot fired. The shot is then mapped in real time to the GPS 3D topographical map to determine the shot and position of the target to judge the effectiveness of the shot or "probability of kill".

Regarding claim 40, Cubic Defense Applications MILES 2000 teaches an apparatus for target side receiving of a laser signal from a laser transmitter. The

receiver apparatus estimates the effectiveness of the shot. A target soldier is equipped

with GPS position information and is tracked in real time (see (22)

http://www.cubic.com/cda1/Prod_&_Serv/Cmbt_Trng_Sys/Grnd_Cmbt_Trng/Componen

ts/Instru_equip2.html). Movements and battle events are recorded on a computer.

Munitions parameters are recorded for calculation of an "indirect hit" or area of effect

weapons (tanks, mortar, artillery, chemical, nuclear, biological) and uses the position

information collected to determine if a target unit is "damaged" when it is hit by a laser

signal. The type of weapon and munitions parameters are encoded in the laser signal.

The range of the projectile or area of effect is tracked in order to determine different

degrees of damage. The effective time or range is measure to calculate a hit (see (23)

http://www.cubic.com/cda1/Prod_&_Serv/Cmbt_Trng_Sys/Grnd_Cmbt_Trng/MILES_20

00/Components_AARS/Indvdl_Weapon_Sys.html). This information is recorded on the

real time computer and shows where the event happened on a 3D reference

topographical map equipped with GPS coordinates. The computer can use the 3D

reference points from the GPS coordinate system to determine whether a hit should be

registered and the effectiveness of the hit (see (24)

http://www.cubic.com/cda1/Prod_&_Serv/Cmbt_Trng_Sys/Grnd_Cmbt_Trng/MILES_20

00/Components_AARS/After_Action_Rev.html). For example, if a chemical attack is

made, soldiers upwind from the gas would not be affected.

Cubic Defense Applications MILES 2000 fails to disclose calculating velocity of a

shot. Cubic Defense Applications MILES 2000 teaches realism encoded into each laser

signal incorporating the characteristics of an individual caliber and weapon. Military

cartridges, barrels, and firearm are all designed for consistent results. That is to say, each cartridge, barrel, and firearm are designed to be the same or at least within acceptable ranges of tolerance. Given the information of caliber and weapon and the standardized nature of the weapons system, it is possible to calculate the velocity of each bullet. One of ordinary skill in the art would recognize that the velocity of each bullet is useful in tank, mortar, and artillery gunnery because of the delayed effect of fire due to the unique firing characteristics and distances of each armament. That is to say, a simulated laser artillery shot would hit an area almost instantaneously whereas a realistic artillery shot would take several seconds to hit an area. It would be obvious to one of ordinary skill in the art at the time of the invention to calculate the velocity of each shot to improve the realism of the armaments by ensuring a fired shot struck a position when a real shot would have.

Regarding claim 41, Cubic Defense Applications MILES 2000 discloses a target side position finder in the form of GPS coordinates monitored by a computer in real time. This computer records time information from the real time events including movements and other events. When the target is hit, a hit risk range is calculated and recorded to determine if the unit or soldier is irreparably hit. Elapsed time between shots allows for simulated delayed fire weapons (tanks, mortars, artillery, chemical, biological or nuclear weapons) to accurately determine the status of whether a solder/unit is hit and the severity thereof.

Regarding claim 42, Cubic Defense Applications MILES 2000 discloses a damage simulator including smoke generators of different amounts of smoke for

simulating damage when damage is determined by a judging unit to impact a vehicle or

other unit. The simulation is designed to accurately represent the criticality of a hit. On

the assumption that in reality increased damage would lead to increased smoke, the

simulator would emit more smoke when the vehicle was simulated to be destroyed than

if the vehicle was non-critically struck (see (25)

http://www.cubic.com/cda1/Prod_&_Serv/Cmbt_Trng_Sys/Grnd_Cmbt_Trng/MILES_20

00/Components_AARS/Firing_Devices.html).

Response to Arguments

Applicant's arguments with respect to claims 1-4, 10-13, and 35-42 have been

considered but are moot in view of the new ground(s) of rejection.

Conclusion

The following art through not relied upon is considered pertinent to the

applicant's disclosure: (26)

http://www.cubic.com/cda1/Prod_&_Serv/Cmbt_Trng_Sys/Grnd_Cmbt_Trng/CMTC.htm

l -- Combat Training Center

Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Travis R. Banta whose telephone number is (571) 272-

1615. The examiner can normally be reached on Monday-Friday 9-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Bob Pezzuto can be reached on (571) 272-6996. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TB

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